

**MEETING MINUTES**  
**LIGNITE RESEARCH COUNCIL**  
**July 25, 2001**  
**Doublewood Inn, Bismarck, ND**

**MEMBERS (or their authorized alternates) PRESENT:**

Steve Benson, Energy & Environmental Research Center  
Dick Bergstad, International Brotherhood of Electrical Workers  
John Bluemle, North Dakota Geographical Survey  
John Dwyer, Lignite Research Council  
Carlyle Hillstrom, North Dakota Farm Bureau  
Mike Hummel, BNI Coal, Ltd.  
Doug Kane, MDU Resources Group, Inc.  
Luther Kvernen, Minnkota Power Cooperative, Inc.  
Vernon Laning, Basin Electric Power Cooperative  
John Pelerine, Great River Energy  
Dean Peterson, The North American Coal Corporation  
Lee Peterson, North Dakota Department of Economic Development and Finance  
Mike Pole, Knife River Corporation  
Martin Schock, North Dakota Department of Health  
Vicky Steiner, Coal Conversion Counties Association  
Susan Wefald, North Dakota Public Service Commission

**OTHERS PRESENT:**

David Allard, Lignite Energy Council  
Jim Deutsch, North Dakota Public Service Commission  
Karlene Fine, North Dakota Industrial Commission  
Vicki Gilmore, Lignite Energy Council  
Gary Gress, Montana-Dakota Utilities Co.  
Himanshu Gupta, The Ohio State University  
Carmen Miller, North Dakota Attorney General's Office  
Blake Nicholson, Associated Press  
Clifford R. Porter, Lignite Research Council  
Tony Rude, Lignite Energy Council  
Tim Seck, Great River Energy  
Dan Sharp, Montana-Dakota Utilities Co.  
Duane Steen, Montana-Dakota Utilities Co.  
Dick Stone, Westmoreland Power  
Jerry Vaninetti, Great Northern Properties LD  
John Weeda, Great River Energy  
Gordon Westerlind, Great River Energy

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Lignite Research Council (LRC) chairman John Dwyer called the LRC meeting to order on July 25, 2001 at Doublewood Inn, Bismarck, North Dakota.

**Financial Summary**

Clifford Porter said that information sent to LRC members prior to the meeting described the Lignite Research, Development and Marketing Program (Program) financial summary for the closing of the 1999-2001 biennium and the beginning of the 2001-2003 biennium that started July 1, 2001. The budget and current balances for the Program areas for the 2001-2003 biennium are as follows: administration of the Program (\$400,000), lignite marketing feasibility studies (\$1,300,000), small research projects (\$2,371,772) and demonstration projects (\$14,069,356). There is \$1,315,256 in available uncommitted funds for the small research projects area. For the demonstration projects area, there is an obligation of \$2,127,903 for the 1995 A Program Series Bonds. The bonds will

mature on November 15, 2005. There was an investment earnings return of \$316,260 from 1999-2001 for the Dakota Gasification Company anhydrous ammonia facility project. For the Lignite Vision 21 projects that have been funded to date, \$5,930,460 in obligated Program funds is scheduled to be paid in the 2001-2003 biennium. \$4,721,293 is available for demonstration projects for the 2001-2003 biennium. Porter said that the Lignite Vision 21 funding is an estimated \$23,509,000 from the 1999-2001 through the 2007-2009 bienniums.

Porter said that the current matching funding guideline is 55% for demonstration projects and 45% for small research projects. The 2001-2003 biennium budget and the Lignite Vision 21 Project funding budget are based on the assumption of a ratio of 70% matching Program funding for demonstration projects and 30% for small projects. Dwyer said that the demand for available matching funds is currently more concentrated in the demonstration projects area instead of the small projects area. He asked for a motion to recommend that the Industrial Commission establish a ratio of 70% matching funds for demonstration projects and 30% for small research projects. Dick Bergstad so moved; seconded by Doug Kane. Motion carried.

#### **Approval of 4-26-01 LRC Minutes**

Dwyer asked for a motion to approve the minutes of the April 26, 2001 LRC meeting. Dean Peterson so moved; seconded by Carlyle Hillstrom. Motion carried.

#### **Lignite Research, Development and Marketing Program Updates**

Porter said that in the lignite marketing feasibility studies area, one project has been completed from 1997-1999 biennium funds. The five new projects from 1999-2001 biennium funds are Lignite Vision 21-related. Four of those five are completed and one is active. In the small research projects area, there are 25 projects from the 1999-2001 biennium. Nine are completed and 16 are in progress. There has been \$4,093,283 in funding from the Lignite Research Fund for the 25 small research projects, which have a total project cost of \$21,144,005. That funding ratio equals one state dollar for each \$5.2 in total project costs.

There are three active demonstration projects (Coal Creek Station's gypsum project, the Great River Energy Lignite Vision 21 project, and the Montana-Dakota Utilities Company's Lignite Vision 21 Gascoyne project.) Porter said that the Industrial Commission previously approved \$10,000,000 in funding each for Great River Energy's and Montana-Dakota Utilities Company's Lignite Vision 21 project grant applications.

Gordy Westerlind presented the update on Great River Energy's (GRE) project titled "Lignite Vision 21 Power Plant Project". GRE's contract with the state has been signed and project consultants have been named for the environmental, transmission and generation areas. GRE's in-house study areas are business development and mine/plant sites.

GRE has targeted December 31, 2002 as the "go, no-go" date for Phase I of the project and 2008-2009 as the timeframe for Phase II (plant to be commercial).

Duane Steen presented the update on Montana-Dakota Utilities Company's (MDU) project titled "Lignite Vision 21 Project – Gascoyne, ND". MDU and Westmoreland Power will be partners in the project. Steen said that prospective vendors have been interviewed for the project's various feasibility tasks. There have been a number of meetings with GRE to identify possible partnership opportunities to eliminate duplicate efforts in the transmission and generation areas. Steen said negotiations for a signed contract will be continuing with the Industrial Commission. Tasks will be assigned to Westmoreland's and MDU's vendors, and there will be work with GRE on accomplishing mutual goals for common vendors for Lignite Vision 21.

Dwyer said that the Industrial Commission wants Lignite Vision 21 grant recipients to eliminate duplication of efforts so that the value of the state dollars received is maximized. He said that in the transmission area, there has been a change approved for the Lignite Vision 21 contracts. Tony Rude

will be overseeing the transmission aspects of the contracts to ensure that the grant recipients work together to eliminate duplication of efforts. In the environmental area, Clifford Porter will oversee the contracts to ensure that duplication does not occur.

Susan Wefald asked about the status of MDU's contract with the state. Steen said it is being reviewed and will likely be signed in the next two to three weeks.

**LRC-XLI-A: "Westmoreland Gascoyne, North Dakota"; Submitted by Westmoreland Power, Inc.; Project Manager: Richard C. Stone; Request for: \$500,000 (Reserve for \$10,000,000); Total Project Costs: \$70,000,000.**

Richard (Dick) C. Stone, president of Westmoreland Power, Inc. (WPI), said that WPI signed a development agreement today (July 25, 2001) with MDU to join in the Gacoyne project, and that WPI formally withdraws its own Grant Round XLI grant application titled "Westmoreland Gascoyne".

**LRC-XLII-A: "Low-Temperature NO<sub>x</sub> Reduction Using High-Sodium Lignite-Derived Chars": Submitted by: Energy & Environmental Research Center; Project Manager: Steven A. Benson; Request for: \$320,000; Total Project Costs: \$1,020,000.**

Porter said the goal of the project is to reduce NO<sub>x</sub> emissions from cyclone-fired boilers, and a secondary goal is the reduction of elemental mercury to ionic mercury. The project includes the production of chars from high-sodium lignite. He said that NO<sub>x</sub> reduction from cyclone boilers and mercury removal from lignite-fired systems are real needs with unique challenges.

Wefald asked Porter to give a layman's description of chars. Porter described char as coal that is heated to remove volatile matter, leaving a skeletal carbon structure when char is produced through a heat process. The resulting skeletal carbon structure has desirable characteristics.

As Technical Advisor, Porter said his recommendation is to fund the project, subject to three conditions: 1) funding not to exceed \$160,000; 2) additional sponsors to provide \$160,000, and 3) additional funding commitment by December 31, 2001. Porter said he encourages Energy & Environmental Research Center to obtain input from an A&E firm, although this is not one of the conditions of funding.

Porter summarized the scores and funding recommendations the technical peer reviewers gave the proposal.

Technical Reviewer 01-14 gave the proposal a "funding to be considered" recommendation and an average weighted score of 169 out of a possible 250 points; Technical Reviewer 01-15 ("funding to be considered"; average weighted score: 166/250); Technical Reviewer 01-16 ("funding to be considered"; average weighted score: 124/250). Porter summarized some of the reviewers' comments as follows: Technical Reviewer 01-14: The project could lead to a new market for lignite. The project does not adequately address marketing. With reallocation of funding, the project should be funded. Technical Reviewer 01-15: Project could expand the use of North Dakota lignite. There are significant challenges for this project and for this technology. Would like to see the involvement of an A&E firm. Technical Reviewer 01-16: SCR for controlling NO<sub>x</sub> emission from lignite facilities is a problem that this project may solve. An uncertainty with this technology is the early stage of development relative to the timeframe for regulatory control. Potential cost savings are uncertain.

Porter said that the conflict-of-interest parties for this proposal are Minnkota Power Cooperative, Minnesota Power, Energy & Environmental Research Center, and BNI Coal, Ltd.

Steven Benson made a presentation in support of the proposal and its Carbnnox Process, which he said has 100% NO<sub>x</sub> reduction potential. He said the proposal would provide opportunities for: 1) a new market for high-sodium lignite (sodium catalyzes the NO<sub>x</sub> reduction reactions); 2) Alternative

technology to selective catalytic reduction (high alkali and alkaline earth coal ash may blind SCR catalysts); and 3) NO<sub>x</sub> reduction reactions are exothermic (extract heat for use in power plant).

### **Niederaussem Power Station – An Advanced Lignite-Fired Power Plant**

John Weeda gave a presentation about his recent visit to RWE's Niederaussem Station Unit 9 in Niederaussem, Germany. He said that RWE is Germany's largest power producer (26,340 MW). Capacity at the Niederaussem Station is currently 2,700 MW. Weeda said that all of RWE's units are scrubbed and they produce gypsum. He said that the following are among the Niederaussem applied technologies that could be an inspiration for Lignite Vision 21: high efficiency, fuel drying, gypsum production, firing technology and materials applications.

### **Minnesota Externalities Update**

Carmen Miller summarized updates concerning the Minnesota Public Utilities Commission's (MPUC) externalities actions. She said that in December 2000, the MPUC issued a notice of investigation and comment period regarding the MPUC's intent to investigate certain issues relating to the establishment of environmental and socioeconomic costs associated with electricity generation. In May 2001, the MPUC issued an order updating externality values and authorizing comment periods on CO<sub>2</sub>, PM<sub>2.5</sub>, and application of externality values to power purchases. The MPUC's order indicated that cost values are to be indexed and that socioeconomic impacts will be considered qualitatively in individual proceedings. On July 2, 2001, the state of North Dakota and approximately two dozen other entities filed their comments with the MPUC. The state presented arguments, including: 1) It is impractical for the MPUC to establish environmental costs; and 2) The MPUC lacks jurisdiction to apply costs outside Minnesota. Miller said that the state of North Dakota's comments included the following points. These points were listed in a handout she gave to LRC members: 1) Concerns about procedure: Burden of proof is on parties seeking to have costs established; 2) Concerns expressed in previous comments: Current geographic limitations on externality values must be maintained; Minnesota has no jurisdiction to regulate beyond its borders; statute is preempted by Commerce Clause and other federal laws; and environmental costs must be established on each method of generation. 3) PM<sub>2.5</sub>: It is not practicable to establish values for PM<sub>2.5</sub> at this time, because the Environmental Protection Agency's (EPA) regulatory efforts for PM<sub>2.5</sub> are not yet final; litigation is still pending. 4) Mercury: It is not practicable to establish values for mercury at this time, and any efforts to do so would be premature and duplicative of other federal and state regulatory efforts.

EPA has indicated its intent to regulate mercury emissions from lignite-fired utility plants, stating that regulations will be proposed in 2003 and finalized in 2004; and 5) Application of externality values to wholesale power purchases: Current geographical limitations must apply, and may be impossible as a practical matter, because of difficulty in determining where power was actually generated.

Miller said the MPUC's responses to the state of North Dakota's comments might be issued at the next MPUC meeting in October 2001.

Dwyer commended Martin Schock for the expert testimony Schock provided in the first phase of the Minnesota externalities proceedings in the mid-1990s.

### **Grant Application Deadline Dates; Upcoming LRC Meetings**

Dwyer announced that the remaining grant application deadline date for 2001 is September 1. In addition, the North Dakota Industrial Commission added monthly grant application deadlines from December 1, 2000 through December 1, 2001, to facilitate Lignite Vision 21 Project grant applications.

The next regularly scheduled meeting of the Lignite Research Council will be at 11:00 a.m. October 30, 2001 at Radisson Inn, Bismarck.

### **Other Business**

Vicky Steiner invited the LRC members to Williston Basin oil and natural gas meetings to be held August 7-9, 2001 in Williston. Wefald said that the North Dakota Public Service Commission has invited members of the Minnesota Public Service Commission to visit North Dakota, and that two of the MPUC commissioners have said they will do so.

### **Ballot results: LRC-XLII-A: "Low-Temperature NO<sub>x</sub> Reduction Using High-Sodium Lignite-Derived Chars"**

Dwyer announced that the 16 LRC members voted as follows to recommend that the Industrial Commission approve funding of Energy & Environmental Research Center's proposal ("Low-Temperature NO<sub>x</sub> Reduction Using High-Sodium Lignite-Derived Chars"):

**Fund: 15.**

**Do Not Fund: 0.**

**Abstained from Voting: 1.**

The LRC's recommendation will be considered by the Industrial Commission at its August 23, 2001 meeting.

### **Adjournment**

There being no further business, Dwyer asked for a motion to adjourn the meeting. Vernon Laning so moved; seconded by Steiner. Motion carried.

Vicki Gilmore, Recording Secretary

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